Badger Meter Europa

iSonic 2000

Intelligent ultrasonic meter/controller

Description

The iSonic is an intelligent and versatile ultrasonic meter / controller designed to measure level, volume and open channel flow. iSonic's unique features allow accurate measurements in harsh environments. The iSonic uses the measured signals for control purposes and for recording to an internal data logger.

Applications

In fresh and waste water applications, iSonic measures level and calculates flow rates in combination with weirs or flumes using one of its preprogrammed conversion formulas or a 15 point conversion table. With the possibility of the 2-channel measurement, the unit can add, subtract and average. Totalizer functionality is provided for each channel.

In silos and tanks, the iSonic measures level and calculates the volume of the solids or liquids they contain by using one of its standard tank shape preprogrammed conversion formulas. Volume can also be calculated using a custom 15 point conversion table.

In tanks containing chemical substances with high vapour pressure, iSonic maintains its accuracy by constantly measuring the speed of sound, using a specialized sensor. iSonic maintains its accuracy in any application where the atmospheric environment is not standard.

Applications

- Influent- and effluent measurements
- 2-channel flow measurements
- Flow control
- Level differential measurements
- Rake control
- Monitored dual tank measurement
- Tank compensation and control
- Pump control
- Data logging

Features

The unit can be programmed to different set points. The output is done via the 5 available relays or the 2 analog outputs. Complex switching sequences are possible and pump rotation for even wear has been implemented.

As a recorder, the instrument is capable of storing as much as one-month's data at one-minute intervals or more than a year's data at 15-minute intervals, whilst logging all data channels.

iSonic can interface two air-ultrasonic sensors simultaneously, performing independent or combined level, volume and open channel flow measurements. Additionally, the instrument can be interfaced to two temperature sensors, two analog inputs (4-20 mA or 0-5 V) and four digital inputs.

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Power supply

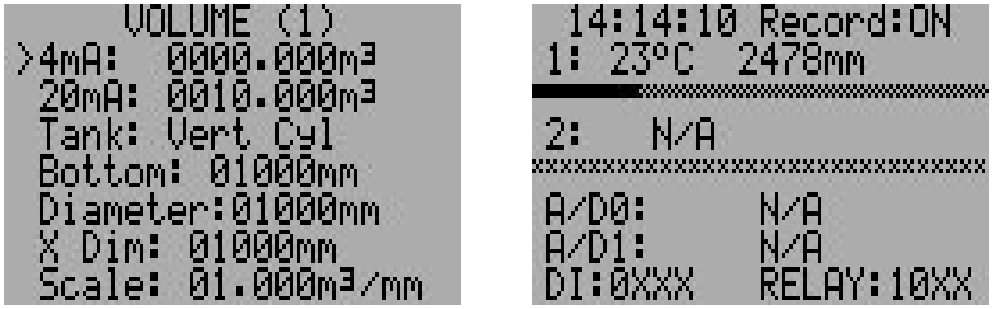
The iSonic can be powered by either 90-230 VAC or 12-14 VDC. A low power sleep/operate mode is provided for installations where no mains power (in the field) is available.

The instrument provides an output voltage 24 V/50 mA to external loop sensors and 12 V for a modem.

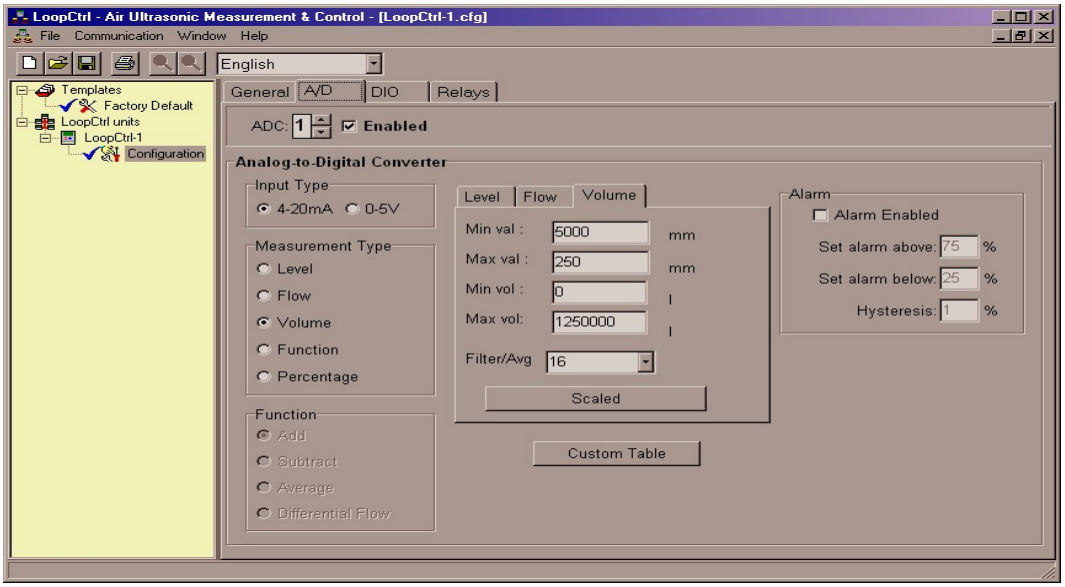
Custom software, configuration and communication

Configuration of the instrument can be done via the six function keys and the graphical LCD display or via a personal computer (PC) using the custom software supplied with the unit. The configuration is password protected.

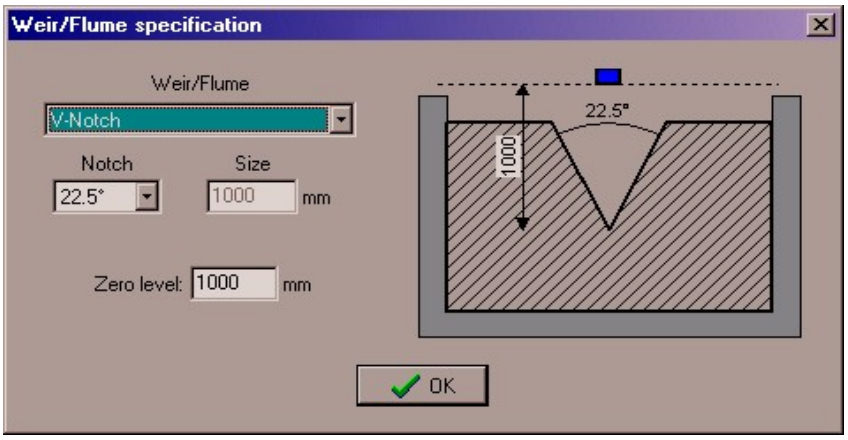
Through this software, the data logger can be downloaded. The read out data can be displayed as a report or in graphical form. There is the possibility to export the data into a .csv format.



Graphic LCD display allows configuration and real time data display



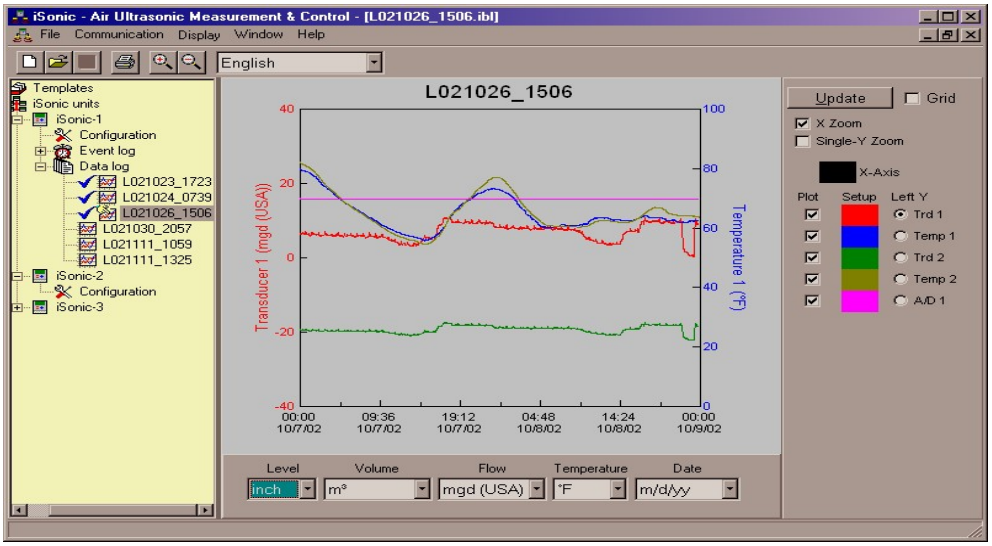
Custom PC software used for configuration and data retrieval



Programming of a unit

- Data can be exported to a PC using RS232 interface
- Two Megabyte flash based storage
- Remote data retrieval
- RS485 network operation
- Modem / GSM modem interface
- SMS mobile communication

Remote communication with the instrument is possible using RS232/RS485, modem, or GSM modem (data & SMS). Via this interface, configuration changes and data retrieval are possible. Using the RS485 interface, a network of up to 32 iSonics can be created, The units can be configured to send SMS for example to a technician when certain selected alarms have occurred. Also, using SMS, current information such as totalizer value, momentaneous level/flow reading, temperature reading, etc. can be interrogated.



Data-logs can be downloaded and displayed using the PC software

Technical data

Type	iSonic 2000 (2-channel measurement)				
Enclosure	Plastic, UV resistant				
Dimensions HxWxD	240 x 270 x 76 mm				
Protection class	IP65				
Operating temperature range	-20°C to +60°C				
Outputs	2 analog outputs 4-20 mA or 0-5 V, isolated 5 relays, max. 250 VAC / 6 A 2 digital outputs max. 80 VDC / 30 mA RS232 or RS485 Voltage output 24 VDC / 50 mA and 12 VDC				
Inputs	2 analog inputs 4-20 mA, isolated 4 digital inputs 1,3 VDC / 2 mA, optically isolated				
Display function	8 lines for level, flow, total, volume, distance and status				
Display language	English				
Supply voltage	90 – 230 VAC or 12 – 14 VDC				
Programming	Via front keypad or PC with software (password protected)				
Measurement accuracy	BAT78L	±1,2 mm			
	BAT52L	±4 mm			
	BAT35L	±24 mm			
	BAT20L	±60 mm			
Data logger	2 MB flash, programmable time intervals, capacities for approx. 44000 records, records available as table or graphics.				
Sensors	Type	Measuring range	Offset	Beam angle	Material
	BAT78L	4 m	0,15 m	7°	Tefzel
	BAT52L	8 m	0,2 m	8°	Tefzel
	BAT35L	16 m	0,2 m	9°	PVC
	BAT20L	24 m	1 m	10°	PVC + Teflon
Temperature compensation	Integrated				
Cable lengths	Max. 1000 m				
Protection class	IP68				